

Mail Stop Interference  
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Paper: 163  
Filed: March 29, 2011

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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MacDermid, Inc.,  
Junior Party  
(Patents 6,444,109 and 6,905,587  
Inventors: Ronald Redline, David Sawoska and Peter Kukanskis),

v.

Enthone Inc.,  
Senior Party  
(Application 10/099,936,  
Inventors: Andrew McIntosh Soutar and Peter Thomas McGrath).

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Patent Interference 105,738 (RES)  
(Technology Center 1700)

*Before* RICHARD E. SCHAFER, RICHARD TORCZON and SALLY  
GARDNER LANE, *Administrative Patent Judges*.

SCHAFER, *Administrative Patent Judge*.

Judgment

A decision on motions (Paper 161) accorded Enthone the benefit of the September 29, 1997, and December 8, 1995, filing dates of its Applications 08/939,656 and 08/567,885. These dates are before the earliest date of invention alleged in MacDermid's Priority Statement. Paper 32, p. 2.

It is appropriate, therefore, to issue judgment on priority against MacDermid.

Accordingly, it is

ORDERED that judgment on priority as to the subject matter of Count 1 (Paper 1, p. 3 and Paper 162, p. 2) is awarded against junior party, MacDermid, Inc.;

FURTHER ORDERED that MacDermid, Inc. is not entitled to a patent including the subject matter of Claims 1-8 of its Patent 6,444,109 and Claims 1-8 of its Patent 6,905,587;

FURTHER ORDERED that Claims 1-8 of its Patents 6,444,109 and Claims 1-8 of its Patent 6,905,587 will be cancelled (35 U.S.C. § 135(a));

FURTHER ORDERED that a copy of this judgment be made of record in the files of Patents 6,444,109 and 6,905,587 and Application 10/099,936; and

FURTHER ORDERED that if there is any settlement agreement or related documents which have not been filed, attention is directed to 35 U.S.C. § 135(c) and 37 CFR § 41.205.

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*Before* RICHARD E. SCHAFER, RICHARD TORCZON and SALLY  
GARDNER LANE, *Administrative Patent Judges*.

SCHAFER, *Administrative Patent Judge*.

Decision - Interlocutory Motions - 37 CFR § 41.125(b)

1 I. Introduction

2 Eight motions are pending before us for consideration. The motions  
3 and our decision on each are listed below:

1           1. Enthone's Miscellaneous Motion 1 (Paper 25) to declare an  
2 additional interference between Enthone's involved application and a  
3 number of other patents owned by MacDermid. We dismiss this motion.

4           2. Enthone's Substantive Motion 2 (Paper 26) to add MacDermid's  
5 Patent 6,905,587 to this interference. We grant the motion.

6           3. Enthone's Substantive Motion 3 (Paper 27) for the benefit of the  
7 filing dates of two earlier filed U.S. applications and a Great Britain  
8 application. We grant the motion with respect to the U.S. applications and  
9 do not reach the benefit of the British application.

10          4. Enthone's Substantive Motion 4 (Paper 28) asserting  
11 unpatentability of the claims of MacDermid's involved patent. We dismiss  
12 the motion as moot because it is unnecessary for us decide the motion.

13          5. Enthone's contingent Substantive Motion 5 (Paper 29) that Claims  
14 1-8 of the 587 patent are unpatentable in light of certain prior art. We  
15 dismiss the motion as moot because it is unnecessary for us to decide it.

16          6. MacDermid's Substantive Motion 1 (Paper 22) to substitute a  
17 narrower count. We deny the motion.

18          7. MacDermid's Substantive Motion 2 (Paper 23) attacking the  
19 adequacy of the written description for Enthone's Claims 33 and 36. We  
20 dismiss the motion because it is unnecessary for us to decide it.

21          8. MacDermid's Substantive Motion 3 (Paper 24) to undesignate it's  
22 Claims 2, 5, 6 and 8. We deny the motion.

## 23   II.    The Parties' Subject Matter

24          The invention claimed by both parties relates to a process said to  
25 enhance the ability to solder electrical components to the metal surfaces of  
26 printed circuit boards. The process has two principal steps: (1) immersing  
27 the metal surface in an "immersion silver plating solution" to provide a

1 silver plate layer on the metal surface and (2) contacting the silver plate with  
2 a second solution including certain specified compounds and their mixtures.

3 Count 1, which is identical to MacDermid's Claim 1 is reproduced  
4 (paragraphing and emphasis added):

5 1. A process for improving the solderability of a metal  
6 surface, said process comprising:

7 a). contacting the metal surface with an immersion  
8 silver plating solution

9 thereby producing an immersion silver plate  
10 upon the metal surface; and thereafter

11 b). treating the immersion silver plated metal  
12 surface with a solution comprising an additive  
13 selected from the group consisting of

14 fatty amines,

15 fatty amides,

16 quaternary salts,

17 *amphoteric salts,*

18 *resinous amines,*

19 *resinous amides,*

20 *fatty acids,*

21 *resinous acids,*

22 ethoxylated versions of any of the foregoing,

23 and

24 *mixtures of any of the foregoing.*

25 III. MacDermid's substantive Motions 1 and 3 to substitute a  
26 narrower count and to designate certain of its claims as not  
27 corresponding to the count

28 MacDermid Substantive Motion 1 (Paper 22) seeks to substitute  
29 a different count. According to MacDermid, the current count reads  
30 on two patentably distinct inventions and one of them should be  
31 excluded from the count. MacDermid's Substantive Motion 3 (Paper  
32 24) seeks to designate MacDermid's Claims 2, 5, 6 and 8 as not  
33 corresponding to the count. MacDermid argues that these claims are  
34 directed to subject matter patentably distinct from the count and

1 should be excluded from the interference. Both motions require  
2 argument supported by evidence that the subject matter sought to  
3 excluded is patentably distinct, i.e., not anticipated and non-obvious,  
4 in light of the remaining subject matter.

5 A. Establishing non-obvious subject matter

6 An interference may be declared, when an application, “in the opinion  
7 of the Director, would interfere with any pending application, or with an  
8 unexpired patent . . . .” 35 U.S.C. § 135(a). The Notice of Declaration  
9 identifies the conditions of the interference. The conditions include, inter  
10 alia, the count and the claims corresponding to the count. 37 CFR  
11 §§ 41.203(b), 41.201 (definition of “count”) and 41.207(b)(2) (definition of  
12 “claim correspondence”). The status quo of the interference may be  
13 changed by motions filed by the parties. 37 CFR §§ 41.121 and 41.208.

14 The status quo in an interference is presumed to be correct. A party  
15 seeking to change the status quo has the burden of providing an explanation,  
16 supported by evidence, that it is entitled to the relief requested. 37 CFR  
17 §§ 41.121(b) and 41.208(b).

18 Changing the conditions of the interference often involves  
19 demonstrating that certain subject matter is non-obviousness when  
20 compared, for example, to the subject matter of the count or other claims.

21 For example, a party seeking to have claims designated as not  
22 corresponding to the count must show that the subject matter sought to be  
23 removed from the interference is neither anticipated by nor rendered obvious  
24 by the count subject matter. In this non-obviousness analysis, the count is  
25 essentially a “primary reference” and other evidence may be relied upon to  
26 show that the differences from the count would not have been obvious.

1           The evaluation of obviousness or non-obviousness involves the now  
2 familiar considerations mandated by *Graham v. John Deere Co.*, 383 U.S. 1,  
3 17-18 (1966): (1) the scope and content of the prior art; (2) the differences  
4 between the claims and the prior art; (3) the level of ordinary skill in the  
5 pertinent art; and (4) secondary considerations, if any, of nonobviousness.  
6 *McNeil-PPC, Inc. v. L. Perrigo Co.*, 337 F.3d 1362, 1368 (Fed. Cir. 2003).  
7 The obviousness (and non-obviousness) determination must be made from  
8 the perspective of a hypothetical person having ordinary skill in the art.  
9 *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985);  
10 *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1452 (Fed.  
11 Cir.1984). The hypothetical person of ordinary skill in the art is presumed to  
12 know all applicable prior art. *In re Carlson*, 983 F.2d 1032, 1037 (Fed. Cir.  
13 1992); *Standard Oil*, 774 F.2d at 454.

14           The burden of establishing a prima facie case of non-obviousness is  
15 on the moving party. 37 CFR § 41.208(b). Meeting this burden typically  
16 involves proving a negative – that certain subject matter would not have  
17 been obvious to the person having ordinary skill in the art. As a negative  
18 burden, the threshold of proof is low, but there still is an evidentiary  
19 threshold that must be met. *See Cerveceria Centroamericana S.A. v.*  
20 *Cerveceria India, Inc.*, 892 F.2d 1021, 1024 (Fed. Cir. 1989).

21           A party attempting to show that certain subject matter would have  
22 been non-obviousness, must show that there are differences from the  
23 “primary reference.” Differences from the primary reference, alone,  
24 however, do not prove non-obviousness. It must be established that the  
25 differences are such that the subject matter as a whole would not have been  
26 obvious to a person having ordinary skill in the art. Where secondary  
27 considerations are not relied upon, the movant must provide some



1 evidentiary basis for holding that the differences render the subject matter  
2 non-obvious. Non-obviousness must be determined in light of the scope and  
3 content of the prior art and the level of ordinary skill in the art. *Graham*,  
4 383 U.S. at 17-18. The movant must provide some evidence as to the level  
5 of ordinary skill in the art. Since the person of ordinary skill is assumed to  
6 know all the relevant prior art, the proffered evidence must provide a basis  
7 for concluding that the universe of relevant prior art would not provide a  
8 basis or reason to modify the primary reference to supply the differences. A  
9 movant might meet this negative burden by providing testimony by a person  
10 actually skilled in the particular art that he is unaware of any prior art and/or  
11 other basis that would provide a reason to modify the subject matter of the  
12 “primary reference” to account for the differences. The “other reasons”  
13 include, for example, testimony that the differences from the “prior art” do  
14 not reflect conventional elements, routine practices or other matters well  
15 known in the art. Where the evidence is sufficient, the movant will have  
16 established a prima facie case of non-obviousness.

17 B. MacDermid’s motion to substitute a different count

18 MacDermid moves to substitute the current Count 1 with Proposed  
19 Count 1a. The current count is identical to MacDermid’s Claim 1. Paper 1,  
20 p. 3. Count 1 specifies that the treatment solution include an additive  
21 selected from (emphasis added):

22 fatty amines, fatty amides, quaternary salts, *amph[o]teric*  
23 *salts, resinous amines, resinous amides, fatty acids,*  
24 *resinous acids, ethoxylated versions of any of the*  
25 *foregoing, and mixtures of any of the foregoing.*

26 MacDermid’s Proposed Count 1a would eliminate the additives shown in  
27 italics limiting the additives to

1 fatty amines, fatty amides, quaternary salts, and  
2 ethoxylated versions of any of the foregoing.

3 Paper 22, pp. 2-4.

4 MacDermid argues that Count 1 encompasses patentably distinct  
5 inventions. In particular, MacDermid argues that the above-highlighted  
6 additives, --amphoteric salts, resinous amines, resinous amides, fatty acids,  
7 and resinous acids (Group 1) -- are patentably distinct from the remaining  
8 additives -- fatty amines, fatty amides, and quaternary salts (Group 2). Paper  
9 22, pp. 4-11. MacDermid argues that the Group 1 additives should be  
10 eliminated from the count because they are patentably distinct from each of  
11 the Group 2 additives. Paper 22, pp. 6-12.

12 MacDermid relies on certain publications said to establish that the  
13 Group 1 additives are chemically and structurally different than the Group 2  
14 additives. Based upon the chemical and structural differences, one having  
15 ordinary skill in the art, it is argued, would not have been able to predict that  
16 the Group 1 additives could be successfully employed in the process to  
17 improve the solderability. Specifically, MacDermid argues that one having  
18 ordinary skill in the art would not predict or expect that the Group 1  
19 additives could be (1) provided in solution, (2) work with silver plating and  
20 (3) improve solderability. Paper 22, p. 7, ll. 6-11.

21 The status quo of the interference is that the Group 1 and Group 2  
22 additives are not separately patentable inventions. As the moving party,  
23 MacDermid has the burden to present sufficient facts to change the status  
24 quo 37 CFR § 41.121(b) (“The party filing the motion has the burden of  
25 proof to establish that it is entitled to the requested relief”) and § 41.208(b)  
26 (“To be sufficient, a motion must provide a showing, supported with  
27 appropriate evidence, such that, if unrebutted, it would justify the relief

1 sought. The burden of proof is on the movant.”). Thus, MacDermid must  
2 show that the Group 1 additives are separately patentable from the Group 2  
3 additives. In other words, taking the Group 2 additives as prior art, the  
4 Group 1 additives must be shown to be neither anticipated nor rendered  
5 obvious.

6 The Group 1 additives are different than and not anticipated by the  
7 Group 2 additives. Thus, it remains to evaluate whether the facts establish  
8 the basis for holding that the Group 1 additives are non-obvious to a person  
9 having ordinary skill in the art.

10 The determination that the Group 1 additives are non-obvious from  
11 the Group 2 additives requires evaluation of the level of ordinary skill in the  
12 art in addition to the differences.

13 We have not been directed to evidence adequately establishing the  
14 level of ordinary skill in the art. The person of ordinary skill is presumed to  
15 know all the relevant art. *Carlson*, 983 F.2d at 1037. MacDermid’s relied  
16 upon evidence does not establish what the person of ordinary skill in the art  
17 knows, or, more importantly for establishing non-obviousness, would not  
18 have known. The relied upon evidence fails to establish that the level of  
19 ordinary skill in the art does not include the knowledge that the Group 1  
20 additives in addition to the Group 2 additives would have been recognized as  
21 alternatives in the process, notwithstanding the different characteristics of  
22 the additives in each group. The evidence relied upon establishes only that  
23 the Group 1 and Group 2 additives are chemically different. MacDermid’s  
24 argument that because of their chemical structures, one having ordinary skill  
25 in the art would not expect the Group 1 additives to be alternatives to the  
26 Group 2 additives in the process (Paper 22, p. 8) is not supported by a  
27 preponderance of the evidence.

1 MacDermid's motion to substitute its proposed count for the current  
2 count is denied.

3 C. MacDermid's motion to designated its Claims 2, 5, 6,  
4 and 8 as not corresponding to the Count

5 MacDermid moves to have its Claims 2, 5, 6, and 8 undesigned and  
6 removed from the interference. The motion is denied.

7 MacDermid's Claims 2 and 6 are dependent claims that add the  
8 limitation that the immersion silver plating solution "comprises a material  
9 selected from the group consisting of imidazoles, benzimidazoles, imidazole  
10 derivatives and benzimidazole derivatives." Claims 5 and 8 are also  
11 dependent claims and add the requirement that the silver treatment solution  
12 include a number of additives including (stearamidopropyl) dimethyl  
13 hydroxyethylammonium dihydrogen phosphate, and its mixtures with the  
14 other additives

15 In order to undesignate Claims 2, 5, 6 and 8 MacDermid must provide  
16 evidence to prove that the subject matter of those claims is patentably  
17 distinct from the subject matter of the count. "A claim corresponds to a  
18 count if the subject matter of the count, treated as prior art to the claim,  
19 would have anticipated or rendered obvious the subject matter of the claim."  
20 37 CFR § 41.207(b)(2).

21 1. Claims 2 and 6

22 Each of these claims require that the silver plating solution include  
23 imidazoles, benzimidazoles, or their derivatives. Paper 5, p. 3. The count  
24 requires the use of a silver plating solution but is silent as to any of the  
25 specific constituents of that solution.

26 MacDermid presents two arguments: (1) the recited compounds would  
27 not have been obvious because one having ordinary skill in the art would

1 have no motivation to include the compounds in the silver plating solution  
2 and (2) that imidazoles and imidazole derivatives are patentably distinct  
3 from benzimidazoles and its derivatives. Paper 24, pp. 2-9.

4 Claims 2 and 6 are designated as corresponding to the count.  
5 Presumptively, therefore, the subject matter of Claims 2 and 6 is patentably  
6 indistinct from the subject matter of Count 1. MacDermid bears the burden  
7 of proof to present facts supporting a conclusion that the use of the recited  
8 compounds in the method of Count 1 would not have been anticipated or  
9 obvious. As was the case with its motion to replace the count, MacDermid  
10 has failed to direct us to adequate evidence establishing the level of ordinary  
11 skill in the art. MacDermid has provided evidence establishing only that  
12 imidazoles and benzimidazoles are different. MacDermid has not directed  
13 us to facts sufficient to show, by a preponderance of the evidence, that those  
14 having ordinary skill in the art would not have known to use imidazoles,  
15 benzimidazoles or their derivatives in the immersion silver plating solution  
16 or that imidazoles and benzimidazoles are not recognized alternatives in  
17 immersion plating notwithstanding the differences in structure. Thus, we  
18 have not been provided with a sufficient evidentiary foundation establishing  
19 the level of ordinary skill in the art and we are unable to properly perform  
20 the *Graham* analysis.

21 MacDermid has not established either that use of imidazoles,  
22 benzimidazoles or their derivatives would have been unobvious from the  
23 subject matter of Count 1 or that the imidazoles and benzimidazoles and  
24 their respective derivatives are patentably distinct from each other.<sup>1</sup>

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<sup>1</sup> In this regard we note that both parties contemplate using imidazoles, benzimidazoles or their derivatives as part of the immersion coating solution. Application 10/099,936, p. 23; Patent 6,444,109, col. 7, ll. 6-9.

1                   2.       Claims 5 and 8

2               Dependent Claims 5 and 8 further specify necessary additives for  
3   treating the plated silver. The list of additives includes (stearamidopropyl)  
4   dimethyl hydroxyethylaminium dihydrogen phosphate (SDHDP) and its  
5   mixtures with the other listed additives.

6               MacDermid argues that (SDHDP) is a patentably distinct species from  
7   the generic additives listed in the Count. Paper 24, p. 9-11. MacDermid  
8   argues that the species has a different structure, and physical and chemical  
9   properties different “than the structures which generally characterize the  
10   generic classes recited in Count 1” and that it could not be predicted that  
11   SDHDP would be soluble in the treatment solution, work with silver plating  
12   or improve solderability. Paper 24, p. 10, l. 20 – p. 11, l. 2.

13              Again MacDermid has not established the relevant level of ordinary  
14   skill in the art. Absent at least some evidence showing that the person of  
15   ordinary skill would likely not recognize SDHDP as a suitable additive in  
16   the process of the count, we are unable to determine whether SDHPD would  
17   have been non-obvious.

18              MacDermid’s Substantive Motion 3 to designate its Claims 2, 5, 6 and  
19   8 as not corresponding to the count is denied.

20   IV.    Enthone’s Substantive Motion 2 to add MacDermid’s Patent  
21           6,905,587 to the interference

22              Enthone moves to add another MacDermid Patent 6,905,587, to this  
23   interference. Paper 26. Enthone argues that an interference-in-fact exists

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Thus, had MacDermid proved that the process requiring the use of  
imidazoles, benzimidazoles or their derivatives were patentably distinct, the  
interference would have been redeclared with an additional count directed to  
the method requiring the use of imidazoles and benzimidazoles and their  
derivatives, respectively.

1 between at least Enthone's involved Claim 32 and the 587 Patent's Claim 1.  
2 Enthone suggests the same count be used and that all of the claims of the  
3 587 patent correspond to the count. Paper 26, pp. 3-6.

4 An interference-in-fact exists when "the subject matter of a claim of  
5 one party would, if prior art, have anticipated or rendered obvious the  
6 subject matter of a claim of the opposing party and vice versa." 37 CFR  
7 § 41.203(a). This standard is analogous to the two-way patentability  
8 determination required in some obviousness-type double patenting  
9 situations. See *In re Braat*, 937 F.2d 589 (Fed. Cir. 1991). Enthone bears  
10 the burden proving entitlement to the requested relief. 37 CFR § 41.121(b).  
11 Thus, Enthone must demonstrate that the two-way test for an interference is  
12 met.

13 Taking Enthone's Claim 32 as presumed prior art, Enthone argues that  
14 the subject matter of Claim 1 of the 587 patent would have been obvious.  
15 Paper 26, p. 2.

16 Both claims are directed to a process for improving solder connections  
17 on printed circuit boards. The process includes immersion silver plating the  
18 metal (typically copper) to which the electrical components of the circuit are  
19 to be soldered. The silver plated surface is then treated with a solution  
20 containing certain additives. Enthone's Claim 32 only specifies a list of the  
21 additives without specifying the concentration in the solution. Claim 1 of  
22 the 587 patent specifies that the concentration of the additives is about 0.1 to  
23 about 15 grams per liter. Enthone argues that the recited concentrations of  
24 the solutes would have been obvious. Paper 26, p. 2. For support Enthone  
25 directs us to PCT publication WO 96/17975 (Ex. 2003). Paper 26, p. 2, ll.  
26 20-25.

1           The WO publication relates to a process that provides improved  
2 solderability of printed circuit board connections. Ex. 2003, p. 19, ll. 12-17.  
3 The process is also said to substantially prevent migration of silver ions from  
4 the silver immersion coating. Ex. 2003, p. 15, ll. 9-14. Like Claim 32 of  
5 Enthone's involved 936 application, the described process includes  
6 immersion silver plating the metal to which the circuit components are to be  
7 soldered. Ex. 2003, p.11, ll. 8-21. The plated metal is then immersed in a  
8 tarnish inhibiting solution. Ex. 2003, p. 13, ll. 12-15. The tarnish inhibitors  
9 include fatty amines, fatty amides, quaternary ammonium salts, and their  
10 ethoxylated forms. Ex. 2003, p. 17, ll. 26-35. The concentrations in the  
11 solution is said to be most preferably in the range of 0.1 to 20 grams per  
12 liter.<sup>2</sup> Ex. 2003, p. 14, ll. 16-21.

13           The person having ordinary skill in the art would have known to use  
14 the preferred concentrations taught in the WO to achieve tarnish protection,  
15 to minimize silver migration and improve solderability. Claim 1 of the  
16 MacDermid's 587 patent recites a more limited concentration range of 0.1 to  
17 15 grams per liter than the WO's range of 0.1 to 20 grams per liter.  
18 MacDermid's claimed range is within the WO's preferred range. Where  
19 there is a range disclosed in the prior art, and the claimed invention falls  
20 within that range, there is a presumption of obviousness. *Iron Grip Barbell*  
21 *Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed. Cir. 2004). The subject

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<sup>2</sup> The WO teaches that concentration should generally be in the range of 0.0001 to 5% by weight and that that range equals to 0.001 to 50 grams per liter. Ex. 2003, p. 14, ll. 16-18. The most preferred range is said to be 0.01 to 2% by weight. Ex. 2003, p. 14, ll. 20-21. Applying the same conversion as the general range gives a most preferred concentration range of 0.1 to 20 grams per liter.



1 matter of Claim 1 of MacDermid's 587 patent in light of the WO would  
2 have been obvious from the subject matter of Enthone's Claim 32.

3 Taking MacDermid's Claim 1 as presumed prior art and comparing it  
4 with Enthone's Claim 32, we find that the Claim 1 subject matter  
5 "anticipates" the subject matter of Claim 32. The Claims are identical  
6 except for the recitation of the concentration of the additives in the solution  
7 and the recitation of some additional additives. The limitation of the  
8 solution concentration in Claim 1 to about 0.1 to about 15 grams per liter  
9 anticipates Claim 32's broader "a solution comprising." The recitation in  
10 Claim 1 that the additives are selected from fatty amides, quaternary salts,  
11 and their ethoxylated versions anticipates those same additives in Enthone's  
12 Claim 1.

13 An interference-in-fact exists between the subject matter of at least  
14 Enthone's Claim 32 and Claim 1 of MacDermid's 587 patent.

15 MacDermid opposes the motion arguing that the 587 patent should not  
16 be added to this interference because: (1) Enthone is not entitled to its  
17 claimed priority date (Paper 39, pp. 2-3.); (2) the count is too broad (Paper  
18 39, pp. 3-6); and (3) Claims 2, 5, 6 and 8 of the 587 patent do not correspond  
19 to the count (Paper 39, pp. 6-10).

20 None of MacDermid's arguments are relevant to the existence of an  
21 interference. The fundamental question is whether the parties are claiming  
22 patentably indistinct inventions. The question is answered by comparing the  
23 parties' claimed subject matter and determining whether the subject matter  
24 of a claim of one party would, if prior art, anticipate or render obvious the  
25 subject matter of a claim of the opposing party and vice versa." 37 CFR  
26 § 41.203(a). None of MacDermid's arguments address the fundamental

1 patentable indistinctness question. Enthone's motion to add the 587 patent  
2 to this interference is granted.

3 At this point we must determine whether the count should be modified  
4 due to the addition of the 587 patent and whether all of the 587 claims  
5 should correspond to the count.

6 Claim 1 of the 587 patent is identical to the count and to Claim 1 of  
7 MacDermid's Patent 6,444,109 except that Claim 1 of the 587 patent  
8 specifies the concentration of the additives in the silver plating solution.  
9 Thus, the subject matter of Claim 1 of 587 is narrower in scope than Count 1  
10 and is totally encompassed by the count subject matter. The count of an  
11 interference is the vehicle for determining the scope of evidence relevant to  
12 the issue of priority. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir.  
13 1993); *Case v. CPC Int'l, Inc.*, 730 F.2d 745, 749 (Fed. Cir. 1984). A party  
14 attempting to prove priority by an earlier reduction to practice must show  
15 reduction to practice of an embodiment satisfying every limitation of the  
16 count. *Newkirk v. Lulejian*, 825 F.2d 1581, 1582 (Fed.Cir. 1987). A party  
17 attempting to prove priority with an earlier conception must show that it had  
18 possession of every feature of the count. *Coleman v. Dines*, 754 F.2d 353,  
19 359, (Fed.Cir. 1985). Since the subject matter of the claims of the 587  
20 patent falls within the scope of the current count, priority proofs directed to  
21 the subject matter claimed in the 587 patent are relevant to prove priority  
22 even if the 587 patent were not involved in the interference. Since adding  
23 the 587 patent to the interference would not affect the scope of the proofs  
24 that could be submitted, there is no need to modify the current count.

25 MacDermid argues that the current count is inappropriate because it  
26 reads on more than one patentable invention. Paper 39, p.5. MacDermid  
27 makes the same arguments it made with respect to its motion to substitute a

1 narrower Count. For the reasons stated above in deciding MacDermid's  
2 Substantive Motion 1 to substitute a count, we hold that the count has not  
3 been shown to include patentably distinct inventions.

4 Enthone argues that Claims 1-8 of the 587 patent correspond to the  
5 count. Paper 26, pp. 3-6. MacDermid only contests the correspondence of  
6 Claim, 2, 5, 6, and 8. We limit our discussion of correspondence to those  
7 claims, and, for reason that will become apparent below, Claim 7.

8 Claim 2 depends from Claim 1 and adds the requirement that the  
9 silver plating immersion solution "comprises a material selected from the  
10 group consisting of imidazoles, benzimidazoles, imidazole derivatives and  
11 benzimidazole derivatives." Thus, Claim 2 differs from the count in two  
12 respects: (1) the recitation of the concentration of the additives in the plating  
13 solution and (2) the necessary inclusion of imidazoles, benzimidazoles or  
14 their derivatives.

15 We explained above why the claimed concentration of additives  
16 would have been obvious. Enthone further relies on a patent to Ferrier, of  
17 record as Exhibit 2005. Ferrier relates to a method for improving  
18 solderability of metal surfaces, such as copper by subjecting the copper to  
19 immersion silver plating. Ex. 2005, col. 2, ll. 13-14. Ferrier teaches an  
20 immersion silver plating composition that includes imidazole and imidazole  
21 derivatives. Ex. 2005, col. 2, ll. 50-56. Ferrier teaches that use of the  
22 imidazoles in the plating solution has a significant positive impact on the  
23 properties and quality of the plating, especially with silver, and extends the  
24 useful life of the plating solution, Ex. 2005, col. 3, ll. 1-35. It would have  
25 been obvious to include imidazoles or its derivatives in the silver immersion  
26 plating solution of the count to get the benefits noted by Ferrier. Claim 2 of  
27 the 587 patent corresponds to the count.

1           Enthone argues that Claim 2 should not correspond to the count  
2 because

3                   [Claim] 2 [is] patentable at least because the prior art  
4 fails to teach a two-step process in which the metal  
5 surface is first contacted with a plating solution  
6 containing imidazoles, benzimidazoles, imidazole  
7 derivatives, or benzimidazole derivatives, and thereafter,  
8 the plated metal surface is treated with a solution  
9 containing one of the additives recited in claim 1.

10 Paper 39, p. 6, l. 19 – p. 7, l. 2.

11           A claim corresponds to the count if the subject matter of the count,  
12 treated as prior art to the claim, would have anticipated or rendered obvious  
13 the subject matter of the claim. 37 CFR § 41.207(b)(2). The count, which is  
14 presumed prior art, describes a two step process in which the metal surface  
15 is first immersed in a silver metal plating solution and then contacting the  
16 plated surface with a solution containing at least one of the additives recited  
17 in the count. As noted above the Ferrier reference cited by Enthone provides  
18 a reason to include imidazoles and imidazole derivatives in the silver  
19 immersion plating solution. Claim 2 of the 587 patent includes subject  
20 matter which would have been obvious from the count and corresponds to  
21 the count.

22           Enthone argues that Claim 5 corresponds to the Count. Claim 5  
23 depends from Claim 1. Claim 5 limits the treatment additive to certain  
24 species of the genera specified in Claim 1, The additive must be selected  
25 from

26                   the group consisting of ethoxylated tallowamine,  
27 ethoxylated cocoamine, tallow amine, cocoamine, amines  
28 derived from tall oil acids, ethoxylated amines derived  
29 from tall oil acids, stearic acid, oleic acid, palmitic acid,  
30 acids derived from the distillation of tall oil,

1 (stearamidopropyl) dimethyl hydroxyethylam[mo]nium  
2 dihydrogen phosphate, alkyliminadipropionic acid  
3 monosodium salts, and mixtures of the foregoing.

4 Patent 6,905,587, Claim 5. Enthone argues that the selection of tallow  
5 amines or cocoamines as the fatty amines and stearic, palmitic and oleic  
6 acid as the fatty acids of the Count would have been obvious. Paper 26, p. 5.  
7 Enthone further argues that tallow amines and cocoamines are well known  
8 species of fatty amines and that stearic acid, oleic acid and palmitic acid  
9 were well known species of fatty acids. Enthone urges that the selection of  
10 these well known fatty amines and fatty acids would have been obvious.  
11 Paper 26, p. 5. Enthone relies on its Exhibits 2008, 2009 and 2010. These  
12 references show, by a preponderance of the evidence, that tallow amines and  
13 cocoamines, stearic acid, oleic acid and palmitic acid are typical species of  
14 fatty amines and fatty acids. It would have been obvious to at least try these  
15 conventional fatty amines and acids as the fatty amines and fatty acids in the  
16 process of the count. Claim 5 encompasses subject matter that is obvious  
17 from the subject matter of the count.

18 MacDermid does not argue that the above-listed fatty amines and fatty  
19 acids would not have been obvious from the count. Rather, MacDermid  
20 argues that

21 [SDHDP] is a patentably distinct member of this group  
22 for the reasons stated at pages 9 to 12 of MacDermid  
23 Substantive Motion No. 3.

24 Paper 39, p. 10. For the reasons we stated above with respect to  
25 MacDermid's Substantive Motion 3, MacDermid has not established that  
26 SDHDP is a patentably distinct additive.

27 Claim 5 corresponds to the count.

1 Claim 6 depends from Claim 5 and like Claim 2 specifies that the  
2 silver plating solution include imidazoles, benzimidazoles, or their  
3 derivatives. For the reasons we stated with respect to Claim 2 and 5, Claim  
4 6 encompasses subject matter that is patentably indistinct from the count.

5 Claim 6 corresponds to the Count.

6 Claim 8 depends upon in order Claims 7, 6, 5 and 1. Claim 7 requires  
7 that the silver plating solution include an oxidant. Claim 8 restates the exact  
8 same treatment additives that must already be present by virtue of Claim 6.

9 Thus, Claim 8 is redundant in not adding a further limitation that is not  
10 already expressly present in the claims from which it depends. In other  
11 words, the subject matter of Claim 8 is identical to that of Claim 7. Claim 7  
12 requires that the silver plating solution include an oxidant. The count does  
13 not require that an oxidant be included in the plating solution. MacDermid,  
14 however, does not assert that the inclusion of an oxidant in the silver plating  
15 solution provides a patentable distinction over the count subject matter. The  
16 subject matter of Claims 7 and 8 would have been obvious for the reasons  
17 stated above with respect to Claims 5 and 6.

18 Claims 7 and 8 correspond to the count.

19 Enthone's motions to add Patent 6,905,587 to this interference  
20 is granted. This interference will be redeclared in a separate paper.

21 V. Enthone's Substantive Motion 3 for benefit of the filing date of  
22 earlier applications

23 Enthone moves for the benefit of the filing date of its parent U.S.  
24 Application 08/939,656, filed September 29, 1997, its grandparent  
25 application 08/567,885, filed December 8, 1995, and Great Britain  
26 Application 9525031.3 filed December 9, 1994, The motion is granted as to  
27 the parent and grand-parent applications. Since the filing dates of those

1 applications are earlier than the earliest date of invention alleged in  
2 MacDermid's Priority Statement (Paper 32, p. 2), it is unnecessary for us to  
3 decide whether Enthone should be accorded benefit for the British  
4 application.

5 Enthone's parent application is a file wrapper continuation of its  
6 grand-parent application. Thus, the two applications presumptively share  
7 the same written description. The written description of the grand-parent  
8 application has been submitted into evidence as Enthone's Exhibit 2015.

9 A party seeking the benefit of the filing date of an earlier application  
10 must show that the earlier application describes and enables at least an  
11 embodiment within the scope of the Count. *Falkner v. Inglis*, 448 F.3d  
12 1357, 1362 (Fed. Cir. 2006); *Hunt v. Treppschuh*, 523 F.2d 1386, 1389  
13 (CCPA 1975) (holding that where a "parent application is relied upon as a  
14 prior constructive reduction to practice . . . the §112, first paragraph  
15 requirements need only be met for an embodiment within the count").

16 Enthone's motion does not address the count. Rather, Enthone argues  
17 support for its claims 32, 33, 35 and 36. The Count is Claim 1 of  
18 MacDermid's patent:

- 19 1. A process for improving the solderability of a metal  
20 surface, said process comprising:
  - 21 a). contacting the metal surface with an immersion  
22 silver plating solution thereby producing an  
23 immersion silver plate upon the metal surface; and  
24 thereafter
  - 25 b). treating the immersion silver plated metal surface  
26 with a solution comprising an additive selected  
27 from the group consisting of

1 fatty amines, fatty amides, quaternary salts,  
2 *amph[olytic] salts, resinous amines, resinous*  
3 *amides, fatty acids, resinous acids*, ethoxylated  
4 versions of any of the foregoing, *and mixtures*  
5 *of any of the foregoing*.

6 Paper 1, p. 3. (paragraphing and emphasis added). The count differs from  
7 Enthone's Claim 32 in reciting the additional additives indicated in italics  
8 above. If Enthone's earlier specification describes and enables an  
9 embodiment within the scope of its Claim 32, the specification will also  
10 describe and enable an embodiment within the count. Enthone directs us to  
11 a claim chart identifying where each of the limitations of Claim 32 are found  
12 in the disclosures of the parent and grand-parent applications. Paper 27,  
13 Appendix 3.

14 Enthone's grandparent specification describes a process said to  
15 improve solderability of metal surfaces on printed circuit boards:

16 This invention has been found to provide considerable  
17 advantages in preventing tarnishing and conferring  
18 humidity resistance on the bare boards produced [so] that  
19 additional protection is provided between the bare board  
20 manufacture stage and the component-attachment stage  
21 *Solderability is found to be enhanced*.

22 Ex. 2015, p. 30 (emphasis added). The process applies a metal coating by  
23 immersing the board into a plating solution. The coating may be silver:

24 In an immersion plating step, the plating composition  
25 comprises metal ions of a metal which is more  
26 electropositive than the conducting material. The choice  
27 of metal ions in the immersion plating solution, therefore  
28 depends on the metal to be plated. Since the pads or  
29 through-holes generally comprise copper or nickel,  
30 suitable examples of plating metals include bismuth, tin,  
31 palladium, *silver* and gold; silver and bismuth ions are  
32 particularly preferred.



1 Ex. 2015, p. 20 (emphasis added). Enthone also discloses providing a  
2 tarnish resistant coating to the plated metal. Ex, 2015, p. 6. Tarnish  
3 resistance is provided by immersing the circuit board in a solution including  
4 a tarnish inhibitor. Ex. 2015, paragraph bridging pages 21 and 22. The  
5 tarnish inhibiting step may be done as a separate step after plating. Ex.  
6 2015, p. 22. Suitable tarnish inhibitors include fatty acid amines and  
7 quaternary ammonium salts. Ex. 2015, p. 28.

8 Enthone's parent and grandparent specification describe at least an  
9 embodiment within the scope of the count.

10 MacDermid opposes the motion arguing that the priority documents  
11 fail to provide either a written description or an enabling disclosure of the  
12 claimed invention. Like Enthone, MacDermid directs its arguments to the  
13 claims rather than to the count. MacDermid relies on portions of the  
14 specification of Enthone's involved application rather than the specification  
15 of the application for which benefit is sought. We have evaluated  
16 MacDermid's arguments in light of the count and Enthone's benefit  
17 applications.

18 MacDermid argues that Enthone's priority applications fail to describe  
19 or enable a silver plating process that did not include a bright etch step.  
20 According to MacDermid, Enthone's written description teaches that a  
21 bright etch step is necessary to make the process work. Paper 40, p. 6.  
22 MacDermid relies on portions of Enthone's written description and certain  
23 remarks made during the prosecution of Enthone's parent application.

24 MacDermid directs us to the following statements from Enthone's  
25 written description:

26 1. From the discussion of the prior art:

1 It is reported in for example ‘Modern Electroplating’ . . .  
2 that silver will plate by displacement on most base metals  
3 but that immersion plated silver is poorly adherent. Ex.  
4 2015, p. 16.

5 2. From Enthone’s summary of the invention:

6 In accordance with the present invention, there is  
7 provided a method for coating a [printed circuit  
8 board] . . . comprising contacting the pads and/or  
9 through-holes with a bright-etch composition in a bright-  
10 etch step; and subsequently immersion plating the etched  
11 pads and/or through-holes in a metal-plating step to form  
12 solderable plated metal surfaces. Ex. 2015, p. 17.

13  
14 3. From Enthone’s description of the preferred embodiments:

15 The use of the bright-etch step allows the formation of a  
16 dense, nonporous metal coating, which is particularly  
17 suitable for a subsequent soldering step. Ex. 2015, p. 18.

18 MacDermid also directs us to certain statements made during the  
19 prosecution of the parent application. These statements are said to show the  
20 criticality of the bright etching step. Paper 40, pp. 5-7 and 12. MacDermid  
21 directs us to the following statements:

22 1. From Enthone’s amendment filed March 18, 1998:

23 Applicants note that the pending claims require a  
24 multistep process in which a printed circuit-board . . . is  
25 contacted with a bright-etch composition to form etched  
26 pads, through-holes or a combination thereof and then  
27 subsequently contacted with a plating composition which  
28 comprises ions of a second metal . . . . Ex. 1018, p. 4.

29 2. From Enthone’s amendment filed September 20, 1999:

30 Applicant notes that each of the pending claims require  
31 or have been amended to require that the underlying bulk  
32 metal, (typically copper), is etched prior to the deposition  
33 of the second metal. Ex. 1019, p. 6.

We have reviewed Enthone’s parent specification and the relied upon prosecution history in light of MacDermid’s arguments.

Enthone’s detailed description describes multiple embodiments or “aspects” of the invention. The embodiment described at pages 17-21 clearly contemplates the use of a bright etch. However, in another embodiment, described at Ex. 2015, pages 21-25, the bright etch step is described as preferred. Thus, Enthone teaches:

In this aspect of the invention, *preferably*, prior to contacting the metal surface with the plating composition in the plating step, the metal surface is cleaned. Cleaning may be using an acidic cleaning composition, such as any cleaning composition known in the art.

\* \* \* \* \*

*Preferably* any pre- cleaning will include a bright-etch step.

Ex. 2015, p. 22 (emphasis added). The characterization of the step as “preferred” teaches that other, albeit unpreferred, cleaning steps could be used. Enthone’s written description, conveys that cleaning solutions other than a bright etch may be used.

The arguments made during prosecution similarly do not support MacDermid's argument that bright etching is a necessary step to make the process work. The referenced statements were directed to the patentability of claims that specifically recited a bright etch step. An argument that a particular limitation renders the claimed subject matter patentable over the prior art is not an admission that the limitation is a necessary step for either written description or enablement purposes.

We note that the patent that issued from Enthone's parent application, includes a claim to a method of coating copper with silver that does not require bright etching. Claim 14 of the 329 patent provides:

1           14. A method of coating copper areas of a printed circuit  
2           board, the method comprising [the] steps of: contacting  
3           the copper areas with a plating composition including  
4           silver ions and a tarnish inhibitor, the tarnish inhibitor  
5           characterized in that it coexists with the silver in solution,  
6           to form areas formed of copper coated by a separate  
7           layer of silver and by a layer of the tarnish inhibitor.

8       Patent 6,395,329, Claim 14. The claim provides some evidence that  
9       Enthone did not consider the bright etching as a necessary step. When the  
10      referenced statements in the specification and prosecution history are  
11      considered in context, they do not support MacDermid's argument that the  
12      bright etch is a necessary step required to make the process work.

13           We also note that MacDermid did not offer any testimony to establish  
14      what would or would not have been conveyed by the earlier applications to a  
15      person having ordinary skill in the art. Without testimony, we do not have a  
16      reason to doubt the correctness of the express statements made in Enthone's  
17      benefit specification that the bright etch step is a preferred rather than a  
18      necessary step in the process.

19           MacDermid also argues that Enthone's parent applications only teach  
20      and enable a process that excludes a reducing agent. Paper 40, pp. 7-9 and  
21      13. MacDermid notes that that the "count" does not require the plating  
22      solution to be free of reducing agent. MacDermid relies on portions of the  
23      specification of Enthone's involved application (Ex. 1001) and published  
24      PCT application WO96/17975 (Ex. 2003).

25           In an interference, a party may be accorded benefit of the filing date  
26      of an earlier application if that earlier application describes and enables an  
27      embodiment that meets the limitations of the count. *Falkner*, 448 F.3d at  
28      1362. Enthone seeks the benefit of its U.S. parent and grandparent  
29      applications. It is the content of those applications that must be evaluated

1 for the purpose of benefit. Enthone presumptively is entitled to the filing  
2 date of its involved application and does not seek the benefit of the WO  
3 application.<sup>3</sup> The content of the involved application and the WO  
4 application are not relevant to benefit motion.

5 In any event, we have considered MacDermid's arguments in the  
6 context of the specification of Enthone's parent and grandparent  
7 applications. MacDermid relies on portions of the disclosure stating that the  
8 invention silver plating solution is "substantially free of reducing agent."  
9 MacDermid notes that in the written description of its grandparent  
10 application, Enthone made the following disclosure (Paper 40, p. 8):

11 In this aspect of the invention there is also provided [] a  
12 new plating composition containing ions of a metal  
13 which can be displacement plated, a [complexing] agent  
14 for the ions, preferably present in higher than equimolar  
15 amounts as compared to the metal ion, and containing a  
16 tarnish inhibitor for the said metal, and being  
17 substantially free of reducing agent capable of reducing  
18 the ions to the metal.

19 Ex. 2015, paragraph bridging pp. 25 and 26. MacDermid also correctly  
20 notes that all of Enthone's originally filed claims in the grandparent  
21 application required that the plating solution be "substantially free of  
22 reducing agent." See Ex. 2015, pp. 42-45. Based upon these disclosures,  
23 MacDermid argues that a person having ordinary skill in the art would not  
24 have understood Enthone to possess or enable an invention that did not  
25 require a plating solution substantially free of reducing agent. Paper 40, pp.  
26 7-9 and 13.

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<sup>3</sup> Where the specification of an involved application or patent is thought not to provide a written description or an enabling disclosure for the subject matter of involved claims, the appropriate challenge is by way of a motion for unpatentability.

1            Enthone responds that the references to “substantially free of reducing  
2 agent” merely makes express what is implicit in the meaning of “immersion  
3 plating bath.” In other words, the references to “substantially free of  
4 reducing agent” do not provide any further constraints on the scope of the  
5 subject matter beyond those inherent in “immersion silver plating solution”  
6 According to Enthone “immersion plating” has a recognized meaning in the  
7 art. Enthone argues that in immersion plating the silver ions in a copper  
8 plating solution are reduced to metallic silver by a redox displacement  
9 reaction where the metallic copper itself acts as the reducing agent and is  
10 replaced by metallic silver. Paper 55, p. 6. Immersion plating is said to be  
11 distinct from electroless plating in that the latter requires a reducing agent.  
12 Paper 55, pp. 6-7.

13            Enthone relies on the testimony of Dr. Thomas Richardson to support  
14 its argument. Dr. Richardson’s testimony is of record as Exs. 2025 and  
15 2050. Dr. Richardson’s education and experience qualify him as an expert  
16 in performance chemistry and plating.<sup>4</sup> Ex. 2025, p. 2.

17            Dr. Richardson testifies that electroless and immersion silver plating  
18 are well known in the art as separate fields. He testifies that the art  
19 recognized distinction between the two types of plating resides in the use of  
20 a reducing agent in the plating solution. Electroless plating uses a reducing  
21 agent while immersion plating does not. Ex. 2050, pp. 2-3, ¶ 6. Dr.  
22 Richardson also testifies that the statements in Enthone’s grandparent  
23 specification that the plating solution was substantially free of reducing  
24 agent, “merely reflects the universal understanding of the differences  
25 between immersion silver plating and electroless silver plating . . . .” Ex.

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<sup>4</sup> MacDermid apparently neither challenged Dr. Richardson’s expertise nor cross-examined his declaration testimony.

1 2050, p. 3, ¶ 7. Richardson says the statement in the grandparent  
2 specification (Ex. 2015, p. 16) that “[a] displacement plating process differs  
3 from an electroless process because the silver coating forms on the surface  
4 of a metal by a simple displacement reaction due to the relative electrode  
5 potentials of the oxidisable metal of the surface to be protec[t]ed and of the  
6 silver ions respectively” also reflects the established distinction between the  
7 two processes. Ex. 2050, p. 3, ¶ 8.

8 We credit Dr. Richardson’s unchallenged testimony. We hold that the  
9 count and the parties’ claims in using the phrases “immersion silver plating  
10 solution” and “immersion silver plate” inherently require that the plating  
11 solution be substantially free of reducing agent. Enthone’s grandparent  
12 specification both describes and enables the use of “immersion silver plating  
13 solutions” as required by the count.

14 MacDermid also argues that Enthone’s grandparent application does  
15 not describe or enable the use of an acid in the immersion plating solution.  
16 Paper 40, pp. 9-11 and 13. We fail to see the relevance of this argument to  
17 the benefit motion. The count does not require that an acid be present. In  
18 any event, we disagree that the use of an acid is not taught. The grandparent  
19 specification teaches that the plating composition may be acidic. Ex. 2015,  
20 p. 30. It also specifically teaches including acids such as citric acid, nitric  
21 acid or acetic acid as buffering agents in the immersion plating solution. Ex.  
22 2015, p. 30.

23 MacDermid also opposes the motion, asserting that Enthone did not  
24 have written description for a treatment solution including fatty amides. As  
25 we noted above, the benefit of the filing date of an earlier application in an  
26 interference requires only a described and enabled embodiment within the  
27 scope of the count. *Falkner*, 448 F.3d at 1362. The count lists a group of

1 additives for the treatment solution including fatty amines and quaternary  
2 salts. Enthone's grandparent application teaches that the treatment solution  
3 may include fatty acid amines, quaternary ammonium and diammonium  
4 salts. Ex. 2015, p. 28. Those disclosures are sufficient for the purposes of  
5 benefit.

6 Enthone's motion for the benefit of the filing date of its parent and  
7 grandparent applications is granted.

8 IV. Enthone's Miscellaneous Motion 1 suggesting the declaration of  
9 an additional Interference

10 Enthone filed a motion suggesting that an additional interference be  
11 declared between its involved application and MacDermid's patents  
12 6,200,451; 6,544,397; and 7,267,259. The motion is dismissed without  
13 prejudice to filing an appropriate suggestion when the involved application  
14 returns to the jurisdiction of the examiner.

15 An applicant suggesting an interference must comply with the  
16 provisions of 37 CFR § 41.202(a). Subparagraph (4) of that section requires  
17 that the applicant explain in detail why the applicant will prevail on priority.  
18 37 CFR § 41.202(a)(4). Enthone has not provided the necessary detailed  
19 explanation. The motion alleges that the proposed count is entitled to the  
20 benefit of various earlier applications with out providing a detailed  
21 explanation.

22 The motion is dismissed without prejudice to renewing the suggestion  
23 for an additional interference before the Examiner.

24 VII. Enthone's Substantive Motions 4 and 5 and MacDermid's  
25 Substantive Motion 2

26 Enthone's Substantive Motions 4 and 5 attack the patentability of the  
27 claims of MacDermid's involved patents on the basis of prior art. Our



1 decision granting Enthone's motion for benefit accorded Enthone the  
2 December 8, 1995, filing date of its grandparent application. MacDermid's  
3 priority statement (Paper 32, p. 2) alleges an earliest date of invention of  
4 January 12, 1999. Thus, it is appropriate to award judgment on priority  
5 against MacDermid's involved claims. Since MacDermid is not entitled to  
6 the subject matter of its patent claims, it is unnecessary to address Enthone's  
7 motions asserting unpatentability of those claims over prior art.

8 Enthone's substantive Motions 4 and 5 are dismissed.

9 MacDermid's Substantive Motion 2 (Paper 23), asserts that the  
10 subject matter of Enthone's Claims 33 and 36 fails to have written  
11 descriptive support in Enthone's involved application. Enthone's Claims 33  
12 and 36 depend from Enthone's Claim 32. Since a decision on the  
13 patentability of these claims will not affect the decision on priority, it is not  
14 necessary that the matter be decided in this interference. We commit the  
15 matter to the sound discretion of the Patent Examiner when Enthone's  
16 application returns to the jurisdiction of the Commissioner of Patents.<sup>5</sup>  
17 MacDermid may bring the matter to the attention of the examiner by filing  
18 an appropriate protest under 37 CFR § 1.291.

19 MacDermid's Substantive Motion 2 is dismissed.

## 20 ORDER

21 1. Enthone's Miscellaneous Motion 1 (Paper 25) to declare an  
22 additional interference is dismissed.

23 2. Enthone's Substantive Motion 2 (Paper 26) to add MacDermid's  
24 Patent 6,905,587 to this interference is granted.

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<sup>5</sup> A copy of MacDermid's Substantive Motion 2 is attached as an Appendix to this opinion.

1           3. Enthone's Substantive Motion 3 (Paper 27) for the benefit of the  
2     filing date of two earlier filed U.S. applications and a Great Britain  
3     application is granted in part.

4           4. Enthone's Substantive Motion 4 (Paper 28) asserting  
5     unpatentability of the claims of MacDermid's involved patent is dismissed.

6           5. Enthone's contingent Substantive Motion 5 (Paper 29) that Claims  
7     1-8 of the 587 patent are unpatentable in light of certain prior art is  
8     dismissed.

9           6. MacDermid's Substantive Motion 1 (Paper 22) to substitute a  
10    narrower count is denied.

11          7. MacDermid's Substantive Motion 2 (Paper 23) attacking the  
12    adequacy of the written description for Enthone's Claims 33 and 36 is  
13    dismissed.

14          8. MacDermid's Substantive Motion 3 (Paper 24) to undesignated its  
15    Claims 2, 5, 6 and 8 is denied.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Enthone Inc.,**  
Junior Party  
(Application 10/099,936,  
Inventors: Andrew McIntosh Soutar and Peter Thomas McGrath)

v.

**MacDermid, Inc.,**  
Senior Party  
(Patent 6,444,109  
Inventors: Ronald Redline, David Sawoska and Peter Kukanskis).

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Patent Interference 105,738 (RES)  
(Technology Center 1700)

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***MacDermid Substantive Motion No. 2***  
***(to Invalidate Enthone Claims 33 and 36 for Lack of Written Description)***

**I. THE MOTION AND THE RELIEF REQUESTED**

Senior party MacDermid, Inc. (“MacDermid”) makes this motion pursuant to 37 CFR § 41.121(a)(1)(iii) for judgment that dependent claims 33 and 36 of junior party Enthone Inc.’s (“Enthone”) involved application, Application No. 10/099,936 of Soutar *et al.* (“Soutar”), are  
5 invalid under 35 U.S.C. §112, first paragraph, for lack of written description.

This interference was declared after Enthone substantially copied claims from MacDermid’s involved patent (U.S. Patent No. 6,449,109) into Soutar, which has a claimed priority date extending back to 1995 by virtue of two alleged parent applications. Soutar’s independent claim 32 recites a two-step process in which the metal surface is first contacted with  
10 a silver plating solution to produce an immersion plated metal surface, and in a second subsequent step, the immersion silver plated metal surface is treated with a solution containing an additive selected from the group consisting of fatty amines, fatty amides, quaternary salts, and ethoxylated versions thereof. Claims 33 and 36 of the Soutar application recite that imidazoles, benzimidazoles, imidazole derivatives, and benzimidazole derivatives (hereinafter collectively  
15 referred to as “imidazoles”) are contained in the silver plating solution – that is, in the solution used in the first step of the two-step process recited in claim 32.

Claims 33 and 36 lack written support because the Soutar application only describes the use of imidazoles in a single step process or in the second step of a two-step process. There is no support within the Soutar specification that would allow Soutar to permissibly claim a process  
20 for improving the solderability of a metal surface by “contacting the metal surface with an immersion plating solution” containing imidazoles in a first step of a two-step process, wherein the second step comprises treating the immersion silver plated metal surface with a solution that

includes fatty amines, fatty amides, quaternary salts, or ethoxylated versions thereof. Such a two-step process as recited in claims 33 and 36 in which a tarnish inhibitor, as defined by Soutar, is provided in both the first and second steps is not supported anywhere in Soutar's specification. That is, the Soutar specification mentions no process whatsoever in which an imidazole is added to the metal plating solution in the first step, and subsequently treating the metal plated surface with a tarnish inhibitor in the second step. Further, regardless of the number of steps of the process, the Soutar specification fails to support the use of both an imidazole and a fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) in a single process.

MacDermid therefore moves for judgment that claims 33 and 36 of Enthone's involved application are unpatentable to Enthone for failing to comply with 35 USC § 112, first paragraph, and are not entitled to be in this interference. By copying claims from MacDermid's patent, Soutar has improperly attempted to claim subject matter that is not described in the specification or in any of its alleged parent applications. To permit this interference to proceed with respect to claims 33 and 36 would reward Soutar for an invention that he did not make or adequately disclose as required by 35 U.S.C. §112, first paragraph.

## **II. STATEMENT OF REASONS WHY THIS MOTION SHOULD BE GRANTED**

Soutar's claims 33 and 36 are not patentable to Soutar because Soutar's specification fails to provide a written description of the recited invention. Under applicable law, Soutar's application must convey with reasonable clarity to those having ordinary skill in the art that, as of the filing date sought, Soutar was in possession of the invention recited in claims 33 and 36. Claims 33 and 36 of Soutar are directed to using imidazoles in a silver plating solution that is contacted with a metal surface in a first step, and subsequently treating the plated metal surface

with a tarnish inhibiting additive in a second step. Soutar's specification, however, only describes using imidazoles as a tarnish inhibitor in the second step of a two-step process. Further, the Soutar specification fails to disclose using both an imidazole and a fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) in a single process. The Soutar application therefore fails to convey to those of ordinary skill in the art that Soutar was in possession of the invention recited in claims 33 and 36 at the time of filing the application. Accordingly, claims 33 and 36 are unpatentable to Soutar pursuant to 35 U.S.C. §112, first paragraph.

**A. Legal Basis for the Requested Relief**

A party to an interference may file a preliminary motion for judgment against an opponent's claim designated to correspond to a count on the ground that the claim is not patentable to the opponent. 37 C.F.R. § 41.121(a)(1)(iii). For the purposes of such a motion, claims are construed in light of the specification in which they appear. *Id.*

Pursuant to 35 U.S.C. §112, first paragraph, the specification of a patent "shall contain a written description of the invention." In order to comply with the written description requirement, an applicant must "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). The "application itself must describe an invention, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought." *Lockwood v. American*

*Airlines Inc.*, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Put more simply, “all of the limitations [of the claims] must appear in the specification.” *Id.*

The written description requirement prevents an inventor from overreaching by forcing the inventor to describe his invention in such a manner that a person of ordinary skill in the art can determine whether an inventor’s later added claims recite something that the inventor actually invented. *Vas-Cath*, 19 USPQ2d at 1115.

Satisfaction of the description requirement insures that subject matter presented in the form of a claim subsequent to the filing date of the application was sufficiently disclosed at the time of filing so that the prima facie date of invention can fairly be held to be the filing date of the application. This concept applies whether the case factually arises out of an assertion of entitlement to the filing date of a previously filed application under § 120 . . . or arises in the interference context wherein the issue is support for a count in the specification of one or more of the parties . . . .

*Vas-Cath*, 19 USPQ2d at 1115-16 (quoting *In re Smith and Hubin*, 178 USPQ 620 (CCPA 1973)).

In the context of an interference, “the issue is whether the specification of one party to the interference can support the claim(s) corresponding to the count(s) at issue, i.e., whether that party ‘can make the claim’ corresponding to the interference count.” *Vas-Cath*, 19 USPQ2d at 1114. Accordingly, Soutar’s application, and those of its alleged parents if the Soutar application is to receive the benefit of the earlier filing dates, must provide a written description for what is recited in the claims.

#### **B. Claims 33 and 36 Fail to Meet the Written Description Requirement**

Claims 33 and 36 of the Soutar application are directed to a two-step method for improving the solderability of a metal surface in which an imidazole is included in the metal plating solution of the first step, and a fatty amine, fatty amide, or quaternary salt (or ethoxylated



versions thereof) is included in a second step. Claims 33 and 36 lack written support because the Soutar application only describes the use of imidazoles in the second step of a two-step process.

Claims 33 and 36 additionally lack written support because the Soutar specification fails to disclose using both an imidazole and a fatty amine, fatty amide, or quaternary salt (or

5 ethoxylated versions thereof) in a single process. A person of ordinary skill in the art would not consider the Soutar specification to describe that which is recited in Soutar's claims 33 and 36 such that Soutar is not entitled to these claims.

1. Claims 33 and 36 Recite Using an Imidazole in the First Step and a Tarnish-Inhibiting Additive in the Second Step of a Two-Step Process

10 Claims 33 and 36 depend directly or indirectly from independent claim 32. The language of claim 32 unambiguously recites a sequential, two-step process in which the first step (i.e., "contacting the metal surface with an immersion plating solution") occurs before the second step (i.e., "treating the immersion silver plated metal surface with a solution comprising an additive"). Not only does claim 32 explicitly require that the first step be performed, *and thereafter*, the  
15 second step be performed, the second step of "treating the *immersion coated metal surface*" can only logically be performed after the metal surface has been coated as recited in the first step. Claims 33 and 36, which depend from claim 32, therefore similarly recite a two-step process.

Further, claims 33 and 36 recite that the "silver plating solution comprises a material selected from the group consisting of imidazoles, benzimidazoles, imidazole derivatives and  
20 benzimidazole derivatives." The "silver plating solution" recited in claims 33 and 36 is the solution used in the first step of the two-step process (i.e., "when contacting the metal surface with an immersion plating solution.") Accordingly, each of claims 33 and 36 recite using imidazoles in the first step of the two-step process.

Claims 33 and 36, by way of their dependence on claim 32, additionally recite a second step of “treating the immersion silver plated metal surface with a solution comprising an additive selected from the group consisting of fatty amines, fatty amides, quaternary salts, and ethoxylated versions of any of the foregoing.”

5           Therefore, each of claims 33 and 36 recites a two-step process that includes using an imidazole in the first step and a fatty acid, fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) in the second step.

2           Soutar’s Specification Only Describes Using Imidazoles in the Second Step of a Two-Step Process

10           The Soutar specification must “convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he . . . was in possession of *the invention*. The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed*.” *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). “Whatever is now claimed,” and what must be supported by the Soutar specification, is a two-step process that includes “contacting the  
15   metal surface with an immersion plating solution” containing an imidazole in the first step, and thereafter, treating the immersion silver plated metal surface with a solution comprising a tarnish inhibitor additive in a second step.

          Soutar’s specification describes a process for providing a tarnish-resistant and solderable coating on the metal pads and through-holes of PCBs. According to Soutar, the process includes  
20   “***metal plating*** the etched pads and/or through-holes by contact with a plating composition ***in a metal plating step to form solderable plated metal surfaces*** and ***contacting the plated metal surfaces with a solution of a tarnish inhibitor***.” [Soutar ¶ 0047 (emphasis added)]. Soutar provides that the “metal plating . . . in a metal plating step to form a solderable plated metal

surface” and “contacting the plated metal surface with a solution of a tarnish inhibitor” can be performed in a single step or as part of a two-step process. At ¶ 0048, Soutar discloses that the metal surfaces can be “contacted with a solution comprising a tarnish inhibitor during the plating step (i.e., contact may be during the formation of the plated metal surfaces).” Alternatively, in a two-step process, “the metal surfaces are formed in the plating step and *subsequently the formed metal surfaces are contacted with a solution comprising a tarnish inhibitor in a further step.*” [Soutar ¶ 0049 (emphasis added)].

There is no mention in the specification, however, that a tarnish inhibitor is used in the first step of the two-step process described by Soutar. Rather, the specification of Soutar only describes a two-step process in which, after the metal surface is plated in the first step, the plated metal surfaces may subsequently be contacted with a solution that includes a tarnish inhibitor in the second step. In describing “suitable tarnish inhibitors” for use with the process, Soutar includes imidazoles and fatty amines, fatty amides, and quaternary salts (and ethoxylated versions thereof) among the list. [Soutar ¶¶ 0071, 0077-0078]. That Soutar considers the imidazoles recited in claims 33 and 36 to be tarnish inhibitors is further bolstered by the fact, that in invoking this interference, Soutar specifically relies on ¶¶ 0077-0078, which list specific imidazoles as “suitable tarnish inhibitors” to establish that the imidazoles recited in claims 33 and 36 are described in the specification. Despite Soutar’s reliance on this passage to provide written support for using imidazoles in the first step of the two-step process recited in claims 33 and 36, the Soutar specification explicitly discloses that in a two-step process, the tarnish inhibitors are used in the *second* step (“the metal surfaces are formed in the plating step and subsequently the formed metal surfaces are contacted with a solution comprising a tarnish inhibitor in a further step” [Soutar ¶ 0049]). There is no description, or even a suggestion, in the

Soutar specification of using a tarnish inhibitor, and specifically an imidazole, in the first step of a two-step process and so it cannot convey this now-claimed process to one of ordinary skill in the art.

5                   3.       Soutar's Specification Does Not Describe Using The Combination of an Imidazole and a Fatty Acid, Fatty Amine, Quaternary Salt, or Ethoxylated Versions Thereof in the Same Process

As discussed above, each of claims 33 and 36 recites a two-step process that includes using an imidazole in the first step and a fatty acid, fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) in the second step. Just as the Soutar specification fails to  
10 describe the use of a tarnish inhibitor in the first step of a two-step process, Soutar similarly fails to describe the use of distinct tarnish inhibitors in the first step and the second step of a two-step process. Thus, the Soutar specification necessarily fails to disclose the use of an imidazole in the first step and the use of a fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) in the second step of a two-step process.

15           Further, regardless of the number of steps used to plate the metal surface and treat the metal surface with a tarnish inhibitor, the Soutar specification does not disclose a process in which an imidazole and a fatty amine, fatty amide, or quaternary salt (or ethoxylated versions thereof) are both utilized. Though imidazoles, fatty amines, fatty amides, and quaternary salts are described by Soutar as "suitable tarnish inhibitors," [See, Soutar ¶¶ 0071-0072 and 0077-  
20 0078], there is no mention whatsoever of using these particular compounds in combination in a process for improving the solderability of a metal surface. The Soutar specification cannot be read to teach such a combination and therefore fails to convey this now-claimed limitation to one

of ordinary skill in the art. Accordingly, Soutar's claims 33 and 36 are not patentable to Soutar under 35 U.S.C. §112, first paragraph.

### III. CONCLUSION

MacDermid's Motion No. 2 should be granted because, for the foregoing reasons, each of Soutar's claims 33 and 36 recites a process which is not supported in the Soutar application in the manner required by 35 U.S.C. §112, first paragraph.

MacDermid therefore requests that the Administrative Patent Judge issue a judgment that claims 33 and 36 of Enthone's involved application, are unpatentable to Soutar for failure to comply with 35 U.S.C. §112.

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Dated: June 7, 2010

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**APPENDIX 1**

**LIST OF EXHIBITS**

1001 – Enthone’s Involved Application, U.S. Publication No. 2002/0150692.

1002 – Enthone’s Revised Suggestion of Interference, filed June 25, 2009.

## APPENDIX 2

### STATEMENT OF MATERIAL FACTS

1. The Soutar application was filed on March 13, 2002, and published as US 2002/0150692  
5 on October 17, 2002. Soutar is directed to a process used during the manufacture of printed circuit boards (PCBs) to provide a tarnish-resistant and solderable coating on the metal pads and through-holes of PCBs. [See, Soutar Abstract] “In the method, the pads and/or through-holes are bright-etched, metal plated, preferably by an immersion process, and treated with a tarnish inhibitor.” [Id.]

10 2. After the metal surface to be plated is cleaned and preferably bright-etched, [Soutar ¶ 0048], the Soutar application discloses “metal plating the etched pads and/or through-holes by contact with a plating composition in a metal plating step to form solderable plated metal surfaces and contacting the plated metal surfaces with a solution of a tarnish inhibitor.” [Soutar ¶ 0047]. Soutar provides that the “metal plating . . . in a metal plating step to form a solderable  
15 plated metal surface” and “contacting the plated metal surface with a solution of a tarnish inhibitor” can be provided in a single step, or alternatively, as part of a two-step process:

Thus, in a preferred method of the invention, the plated metal surfaces are contacted with a solution comprising a tarnish inhibitor during the plating step (i.e., contact may be during formation of the plated metal surfaces).

20 Alternatively, the metal surfaces are formed in the plating step and subsequently the formed metal surfaces are contacted with a solution comprising a tarnish inhibitor in a further step.

[Soutar ¶¶ 0048-0049].

3. At ¶¶ 0072-0081, Soutar provides a list of “suitable tarnish inhibitors that can be used in  
25 all aspects of the invention.” [Soutar ¶ 0071]. Specifically, Soutar discloses that the following can be used as tarnish inhibitors:

(a) fatty acid amines, preferably having at least 6 carbon atoms, most preferably at least 10 carbon atoms and generally no greater than 30 carbon atoms, they may be primary, secondary, tertiary, diamines, amine salts, amides, ethoxylated amines, ethoxylated diamines, quaternary ammonium salts, quaternary diammonium salts, ethoxylated quaternary ammonium salts, ethoxylated amides and amine oxides. . .

(f) alkyl or alkyl benzyl imidazoles, e.g. undecyl imidazole in which the alkyl group has up to 22 carbon atoms, preferably no greater than 11 carbon atoms and in which the alkyl or benzyl groups are optionally substituted.

(g) benzimidazoles, especially alkylaryl benzimidazoles in which the alkyl group has up to 22 carbon atoms, preferably no greater than 10 carbon atoms and in which the alkyl or benzyl groups are optionally substituted, for example 2-(p-chlorobenzyl) benzimidazole which is particularly preferred.

[Soutar ¶¶ 0072, 0077-0078].

4. Claim 32 of the Soutar application is the only independent claim of the Soutar application designated as corresponding to the Count. Claim 32 is directed to a process for improving the solderability of a metal surface which includes:

a). contacting the metal surface with an immersion silver plating solution thereby producing an immersion silver plate upon the metal surface; and thereafter

b). treating the immersion silver plated metal surface with a solution comprising an additive selected from the group consisting of fatty amines, fatty amides, quaternary salts, and ethoxylated versions of any of the foregoing.

5. At page 29 of Soutar's June 25, 2009 Revised Suggestion of Interference, Soutar provides that support for the additives in the "treating" step occurs at page 22, lines 10, 13, and 14 of the Soutar application. The citations to the Soutar specification correspond to ¶ 0072 of the Soutar application, as published. Soutar describes the additives recited in the "treating" step of claim 32 as "tarnish inhibitors." [See, Soutar ¶¶ 0071-0072].



6. Claim 33 of the Soutar application depends from claim 32 and recites that the silver plating solution includes “a material selected from the group consisting of imidazoles, benzimidazoles, imidazole derivatives and benzimidazole derivatives.” Thus, the method of claim 33 recites contacting the metal surface with an immersion silver plating solution

5 containing imidazoles, and thereafter, treating the immersion silver plated metal surface with a solution containing a tarnish inhibitor additive selected from the group consisting of fatty amines, fatty amides, quaternary salts, and ethoxylated versions of any of the foregoing.

7. Soutar’s June 25, 2009 Revised Suggestion of Interference described the support in the Soutar specification for claim 33 as follows:

Applicants' claim	Support in specification
33. A process according to claim 32 wherein the silver plating solution comprises a material selected from the group consisting of	
imidazoles,	Page 23, line 4: “alkyl benzyl imidazoles, e.g. undecyl imidazoles.”
benzimidazoles,	Page 23, line 8: “benzimidazoles.”
imidazole derivatives	Page 23, lines 4-7: “undecyl imidazole ... in which the alkyl or benzyl groups are optically substituted.”
and benzimidazole derivatives.	Page 23, line 11: “2-(p-chlorobenzyl) benzimidazole.

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The citations to the Soutar specification in this chart correspond to ¶¶ 0077-0078 of the Soutar application as published, which places these elements among the list of “suitable tarnish inhibitors.” [See, Soutar ¶¶ 0071-0081].

8. Claim 36 of the Soutar application is identical to claim 33, except that claim 36 depends upon independent claim 32 through intermediary claim 35, which recites that “the metal surface comprises copper.” Thus, the method of claim 36 recites contacting the metal surface (comprising copper) with an immersion silver plating solution containing imidazoles, and

5 thereafter, treating the immersion silver plated metal surface with a solution containing a tarnish inhibitor additive selected from the group consisting of fatty amines, fatty amides, quaternary salts, and ethoxylated versions of any of the foregoing.

9. The support chart provided by Soutar in the June 25, 2009 Revised Suggestion of Interference for claim 36 is identical to the chart for claim 33, reproduced above.

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